

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference IP/P7342/WOD	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/GB2004/005121	International filing date (day/month/year) 06/12/2004	(Earliest) Priority Date (day/month/year) 04/12/2003
Applicant QINETIQ LIMITED		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box II).

3. ☐ Unity of invention is lacking (see Box III).

4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

ELECTRONIC CIRCUIT PACKAGE WITH CAVITY RESONANCE CUT OFF MEMBER

5. With regard to the abstract,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 4

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☒ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

Electrical circuits (4) operating at high frequencies will, due to their nature often radiate electromagnetic energy. The problem gets worse as the frequency of operation gets higher, as the radiation wavelength becomes correspondingly shorter, and hence becomes closer to a length at which the package itself will be resonant. In order to avoid cavity mode resonance a cut off member (10) attached to the lid (9) is introduced into the package cavity (2). The cut off member comprises a dielectric substrate coated with a conductive layer. The package cavity (2) could also be filled with a dielectric filler that makes the package appear electrically larger than its physical dimensions due to the shortening of the wavelength of the electromagnetic fields within a dielectric of increased dielectric constant.

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01L23/552 H01L23/24 H01P1/211 H05K9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L H01P H05K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/067313 A1 (KONDOH HIROSHI ET AL) 6 June 2002 (2002-06-06) paragraph '0031!; figure 1	1-4, 6-12, 18-20
X	PATENT ABSTRACTS OF JAPAN vol. 014, no. 032 (E-876), 22 January 1990 (1990-01-22) -& JP 01 265702 A (MITSUBISHI ELECTRIC CORP), 23 October 1989 (1989-10-23) abstract; figure 3	1,5-12, 15,18-20
X	US 6 611 054 B1 (DUNAWAY THOMAS J ET AL) 26 August 2003 (2003-08-26) column 2, line 13 - line 40; claims 1,8; figure 2 ----- -/--	1,2, 6-10,12, 18-20

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

*A' document defining the general state of the art which is not considered to be of particular relevance

*E' earlier document but published on or after the international filing date

*L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

*O' document referring to an oral disclosure, use, exhibition or other means

*P' document published prior to the international filing date but later than the priority date claimed

*T' later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

*X' document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

*Y' document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

*& document member of the same patent family

Date of the actual completion of the international search

5 July 2005

Date of mailing of the international search report

26/07/2005

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C.(Continuation) DOCUMENTS CO. ERRED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PATENT ABSTRACTS OF JAPAN vol. 014, no. 248 (E-0933), 28 May 1990 (1990-05-28) -& JP 02 069995 A (FUJITSU LTD), 8 March 1990 (1990-03-08) abstract; figure 2	1,5-12, 15,17-20
X	US 6 242 690 B1 (GLOVER HUGH BRIAN) 5 June 2001 (2001-06-05) column 3, line 30 - line 47; claim 16; figures 2a,2b	1,6-8, 12,18-20
Y	GB 2 382 469 A (* MARCONI OPTICAL COMPONENTS LIMITED; * BOOKHAM TECHNOLOGY PLC) 28 May 2003 (2003-05-28) cited in the application page 9, line 11 - line 26; figures 1,7	1-20
Y	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 12, 25 December 1997 (1997-12-25) -& JP 09 223894 A (NIPPON TELEGR & amp; TELEPH CORP <NTT>), 26 August 1997 (1997-08-26) abstract; figure 2 paragraphs '0001!, '0025!, '0026!	1-20
Y	US 4 890 199 A (BEUTLER ET AL) 26 December 1989 (1989-12-26) column 2, line 39 - line 47; figure 2	13
Y	US 2002/029893 A1 (TOYODA JUNICHI ET AL) 14 March 2002 (2002-03-14) paragraphs '0005! - '0008!; figure 1	14
A	US 5 569 879 A (GLOTON ET AL) 29 October 1996 (1996-10-29) column 7, line 50 - line 56; claim 5	3

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